



***Hanford River Protection Project
Low Activity Waste Treatment
First
Briefing to Oregon Hanford
Cleanup Board***

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U.S. Department of Energy

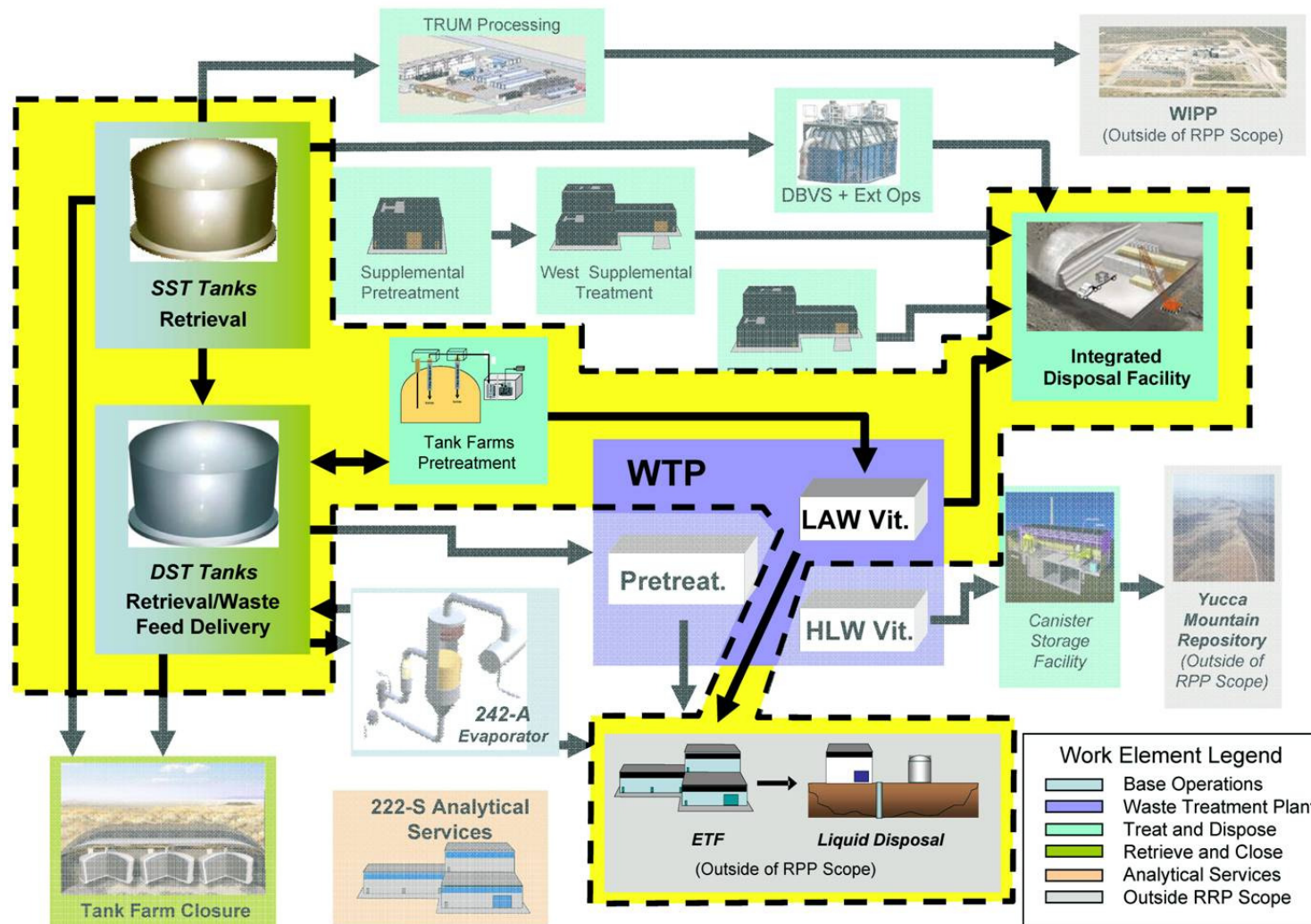


Office of River Protection

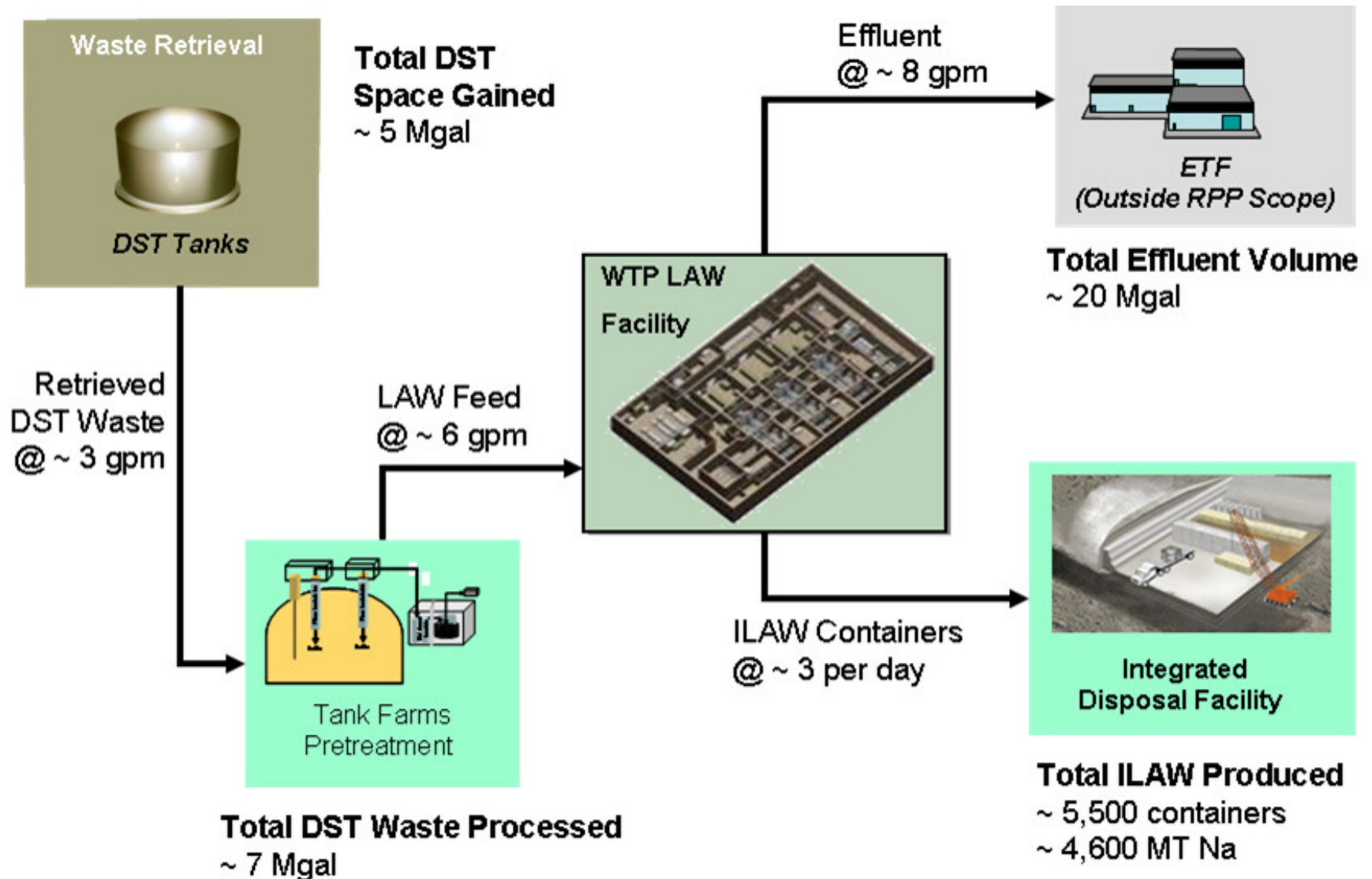
Purpose

- Current schedule has the LAW Vitrification Facility ready for cold commissioning in FY2010
- Can the LAW Vitrification facility be operated earlier?
- What changes and modifications are required to the Waste Treatment Plant and Tank Farm to allow early LAW operation?
- Are the changes feasible and do they provide value to the clean-up mission?
- Initially viable programmatic alternatives are analyzed prior to formally proposing baseline changes.

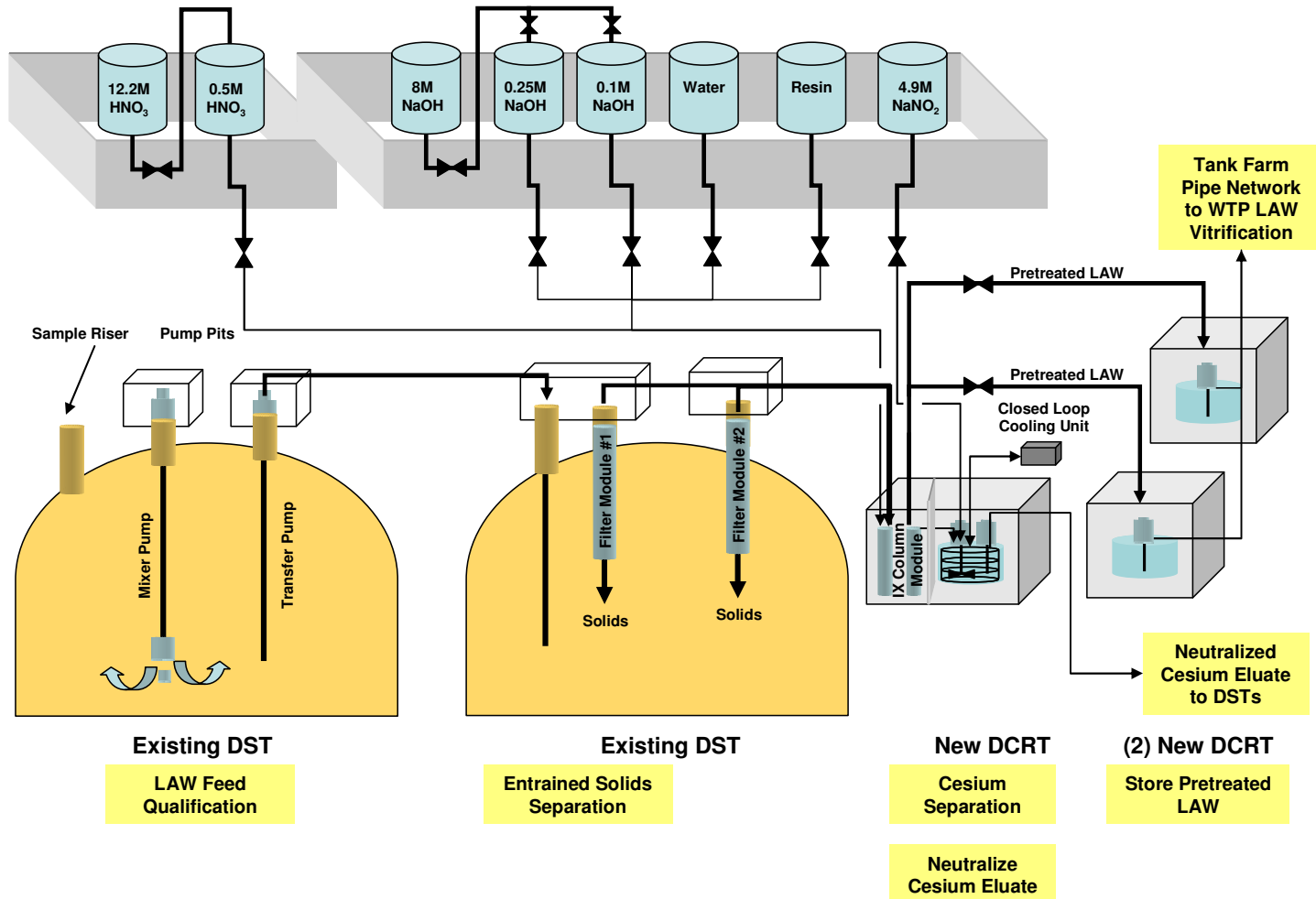
RPP Baseline Mission

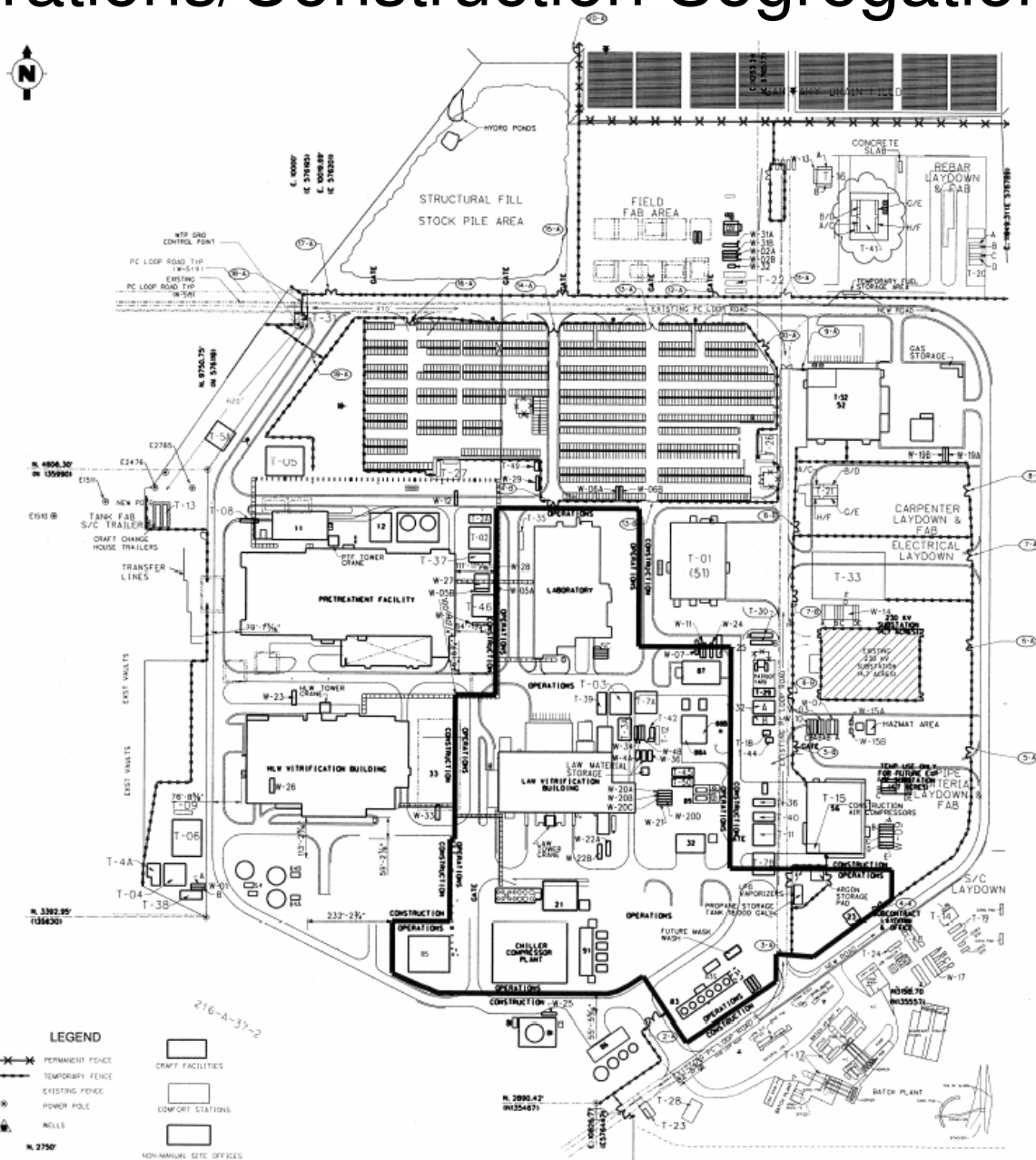


Interim LAW Material Flows



Cs Ion Exchange Process





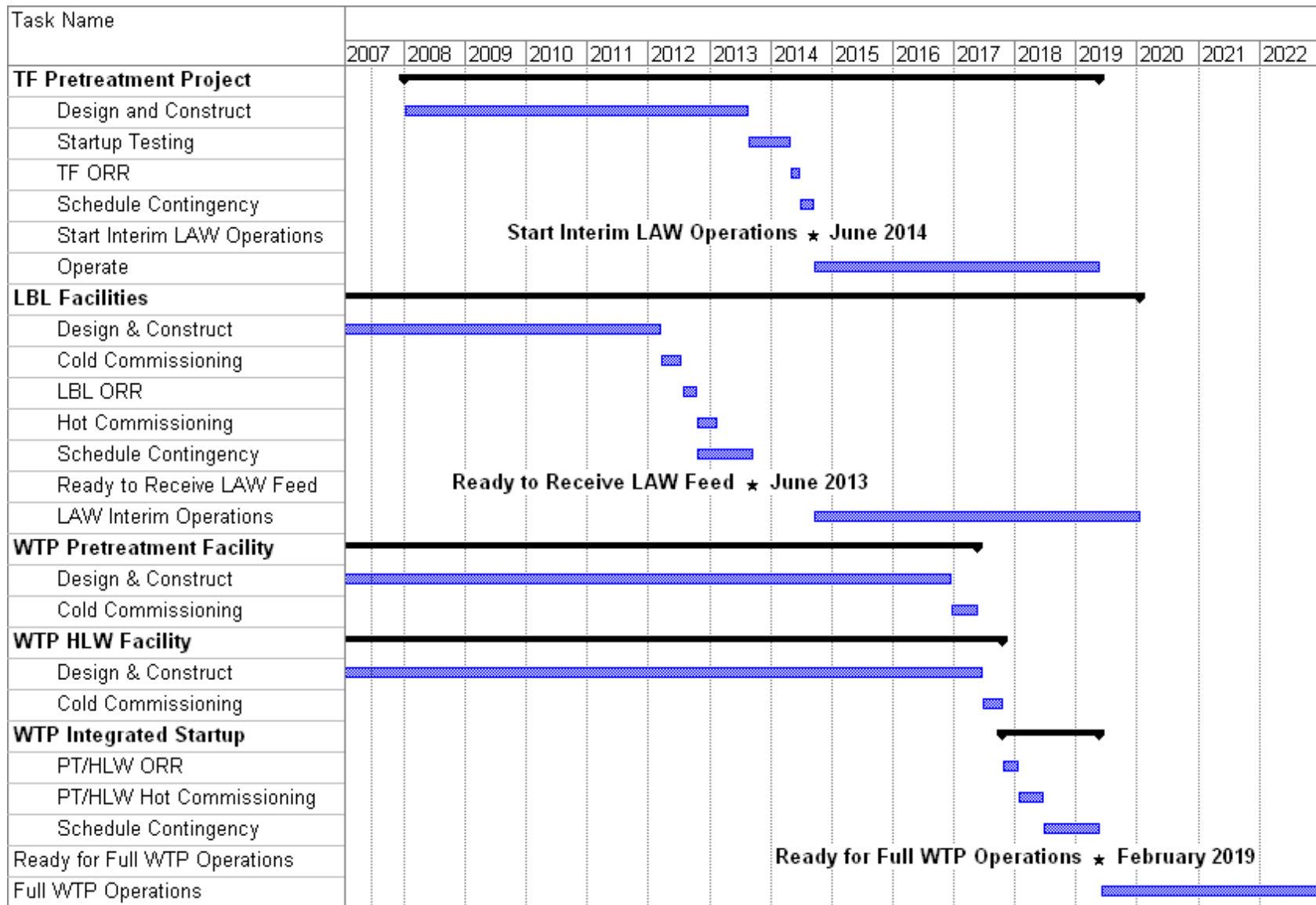
Tank Farm Modifications

- IX Equipment Vault
- Two (2) Ion Exchange Columns
- IX Feed Vessel
- Spent Resin Vessel
- Vaults for three double-contained receiver tanks
 - Pretreated LAW DCRT-1 and DCRT-2
 - Cesium Eluate DCRT-3
- Vessel Off-gas Treatment System Structures for
 - IX Equipment,
 - DCRT –1, DCRT-2 and DCRT-3
- (2) SpinTek™ Micro-rotary Filter Modules
- Resin Dewatering Building
- Vaults and Structures Ventilation System
- Emergency Generator

WTP Modifications

- Diversion (valve) box located to the west of the HLW facility to support waste transfer to and from the Tank Farms
- Waste transfer piping
- Filtration skid in LAW for Caustic Scrubber effluent
- Replace LAW effluent pumps with higher head pumps
- Control room building
- Low point leak detection box and instrumentation
- Add valves to isolate services to other BOF facilities not on line.
- Control system tie-in to the tank farm for receiving and sending waste.
- Add and/or relocate site boundary fencing and controls

Pre-conceptual Schedule



Waste Immobilization Results

- More than 32,000 metric tons of LAW glass produced
 - o ~ 5,500 containers
 - o ~ 4,600 metric tons of sodium incorporated into glass (~8% of the total mission estimate of ~56,000 metric tons of LAW sodium.)
- More than 7 million gallons of double-shell tank (DST) waste processed
- Approximately 4.7 million gallons of DST space created to support accelerated single-shell tank (SST) retrieval
- Reduces WTP startup and operating resource hiring demand
- Increases WTP Operational Readiness Review (ORR) efficiency and success with lessons learned from the *Start LAW First* ORR applied to the PT and HLW facilities ORR
- Interim LAW operating experience gained would support supplemental LAW treatment capacity need decisions.

Next Steps

- Report submitted to DOE-HQ
- DOE-HQ requested that additional proposals be evaluated.